AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application;

--1. (Currently Amended) A decoding apparatus for performing a maximum likelihood decoding process based on a Viterbi algorithm on a data train completing a convolution encoding process, said decoding apparatus comprising:

computation means for performing a trellis computation for decoding said data train completing said convolution encoding process; ~~and~~

control means for controlling said trellis computation to be performed by said computation means with a plurality of processing timings in a plurality of processing units each corresponding to a process performed on n bits of pre encoding data, wherein each of said plurality of processing units [[is]] performs parallel processing ~~performed~~ on a plurality of computation results obtained for 2^n states with one of said plurality of processing timings immediately preceding a present timing of said plurality of processing timings to obtain computation results ~~with said present processing timing~~ for said 2^n states[[.]]; and

memory means for storing said computation results obtained with said immediately preceding processing timing and said present processing timing, wherein during each of said processing units said computation results obtained for said 2^n states with said immediately preceding processing timing are read from a storage area of said memory means and said

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computation results found with said present processing timing for said 2^n states are stored in said storage area.

--2. (Cancelled)

--3. (Currently Amended) A decoding method for performing a maximum likelihood decoding process based on a Viterbi algorithm on a data train completing a convolution encoding process, comprising the step of performing a trellis computation for decoding said data train completing said convolution encoding process with a plurality of processing timings in a plurality of processing units each corresponding to a process carried out on n bits of pre encoding data, wherein each of said processing units [[is]] performs parallel processing performed on a plurality of computation results obtained for 2^n states with one of said plurality of processing timings immediately preceding a present one of said processing timings to find computation results with said present processing timing for said 2^n states[[.]]; and

in each of said plurality of processing units each of said plurality of computation results obtained for said 2^n states with said immediately preceding processing timing are read from a storage area of a memory, and said computation results obtained with said present processing timing for said 2^n states are stored in said storage area.

--4. (Cancelled)

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--5. (Currently Amended) A data receiving unit having a decoding unit for carrying out a maximum likelihood decoding process based on a Viterbi algorithm on a data train completing a convolution encoding process, said decoding unit comprising:

computation means for carrying out a trellis computation for decoding said received data train completing said convolution encoding process; ~~and~~

control means for controlling said trellis computation to be performed by said computation means with a plurality of processing timings in a plurality of processing units each corresponding to a process carried out on n bits of pre encoding data, wherein each of said plurality of processing units is parallel processing performed on computation results obtained for 2^n states with one of said plurality of processing timings, immediately preceding a present one of said plurality of processing timings to obtain a plurality of computation results with said present processing timing for said 2^n states[[.]]; and

memory means for storing said plurality of computation results obtained with said immediately preceding processing timing and said present processing timing, wherein during each of said processing units said plurality of computation results obtained for 2^n states with said immediately preceding processing timing are read from a storage area of said memory means and said computation results found with said present processing timing for said 2^n states are stored in said storage

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area.

--6.   (Cancelled)

--7.   (Currently Amended) A data receiving method,
comprising the step of performing maximum likelihood decoding
processing based on a Viterbi algorithm on a received data
train completing a convolution encoding process, wherein in
said decoding processing a trellis computation for decoding
said data train completing said convolution encoding process
is performed with a plurality of processing timings in a
plurality of processing units each corresponding to a process
performed on n bits of pre encoding data, and each of said
processing units [[is]] performs parallel processing ~~carried out~~ on a plurality of computation results obtained for 2^n
states with one of said plurality of processing timings
immediately preceding a present one of said plurality of
processing timings to find ~~said~~ a plurality of computation
results ~~with said present processing timing~~ for said 2^n
states[[.]], wherein

in each of said plurality of processing units said
plurality of computation results obtained for said 2^n states
with said immediately preceding processing timing are read
from a storage area of a memory and said computation results
found with said present processing timing for said 2^n states
are stored in said storage area.

--8.   (Cancelled)

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